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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,559	02/22/2001	Albert T. Wu	728.1.001	8585

7590 01/16/2002  
Watov & Kipnes  
PO Box 247  
Princeton, NJ 08550

EXAMINER

COLLINS, TIMOTHY D

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 01/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/673,559

Applicant(s)

WU ET AL.

Examiner

Timothy D Collins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-9 and 11 is/are rejected.
- 7) ☒ Claim(s) 4-6, 10 and 12-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. The disclosure is objected to because of the following informalities: in the section "Brief Description of the Drawings", the numbers should be stated individually.

a. The description [21 to24] should be deleted and --21,22,23, and 24-- should be inserted.

b. The description [27 to 30] should be deleted and --27,28,29, and 30-- should be inserted.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 is indefinite because in the last 2 lines it states "from said opposed surface to said opposed surface", this appears to be referring to the same surface, which is the non-sun facing side of the sun ray blocker device.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 7-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,725,023 to Shiki, in view of USPN 5,806,800 to Caplin, and further in view of USPN 5,372,183 to Strickberger.

c. Re claims 1 and 3, Shiki discloses a spacecraft with a sun ray blocker (21), Shiki does not however disclose that the sun ray blocker is configured to block the sun's rays from a radiator, or that it includes thermal insulation. Caplin teaches that a spacecraft has radiators (62, 64, 70, 68, 66, and 72), and Strickberger teaches that a spacecraft uses thermal insulation (42 and 44) for protection from heat transfer. Therefore it would have been obvious to one of ordinary skill in the art to have applied the teachings of Caplin and Strickberger into the device of Shiki so as to allow for the radiators of Caplin to become more effective by shielding them from external heat with the blockers of Shiki and also by using insulation of Strickberger in the blockers so as to increase their effectiveness and the efficiency of the entire system. By using these 3 devices together the efficiency of the entire spacecraft is increased and therefore its cost is decreased over the long run.

d. Re claim 2, Shiki does not disclose that MLI is used in the blockers however MLI is taught in line 9 of column 4 of Strickberger. Therefore it would have been obvious to one of ordinary skill in the art to have applied the teachings of Strickberger into the device of Shiki as modified so as to increase the

efficiency of the blocker even more, with the well known benefits of MLI as taught in Strickberger.

e. Re claim 7, Shiki discloses a sun-facing surface (21), but fails to disclose that it has a solar energy absorptivity of less than 0.5. It would have been obvious to one of ordinary skill in the art to have an optimal low solar energy absorptivity to keep with the purpose of reflecting the sun's energy, because it has been held that finding an optimum is well within the skill of one of ordinary skill in the art.

f. Re claim 8, Shiki discloses that the spacecraft has solar cells (13a and 13b) for providing electrical power.

g. Re claim 9, Shiki discloses a sun-facing surface (21), but fails to disclose that it has a high thermal emissivity of higher than 0.7. It would have been obvious to one of ordinary skill in the art to have an optimal high thermal emissivity to keep with the purpose of emitting heat energy from the satellite, because it has been held that finding an optimum is well within the skill of one of ordinary skill in the art.

h. Re claim 11, Shiki discloses an attachment arm for attaching the blocking device 21 to the spacecraft (figure 2, where 21 intersects 13a and 13b).

***Allowable Subject Matter***

6. Claims 4-6, 10, and 12-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- i. USPN 6,318,673 to Wolters discloses MLI
- j. USPN 6,102,239 to Wu et al. discloses a sun blocking device on a spacecraft.

Note: Three foreign language European Patents were included with the instant application. If the applicant would like these considered it is suggested that a translation be submitted and IDS filed for them as well as for the 2 US Patents and the "Space Craft Systems Engineering" excerpt. The 3 US Patents and the excerpt have been considered.

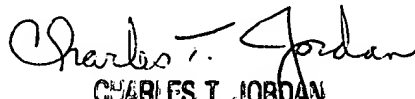
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy D Collins whose telephone number is 703-306-9160. The examiner can normally be reached on M-Th, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on 703-308-2574. The fax phone numbers for the organization where this application or proceeding is assigned are 703-306-4195 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-4180.

tdc  
January 9, 2002

  
CHARLES T. JORDAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3800